

Texas Technology Showcase

December 6, 2006 Presentation

WOWClean™ Pilot Plant

Texas Commission on Environment Quality (TCEQ)

(\$1.6 Million WOW Energies Cost Sharing Grant Program)

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“MEETING THE WORLDS ENERGY & ENVIRONMENTAL CHALLENGES”

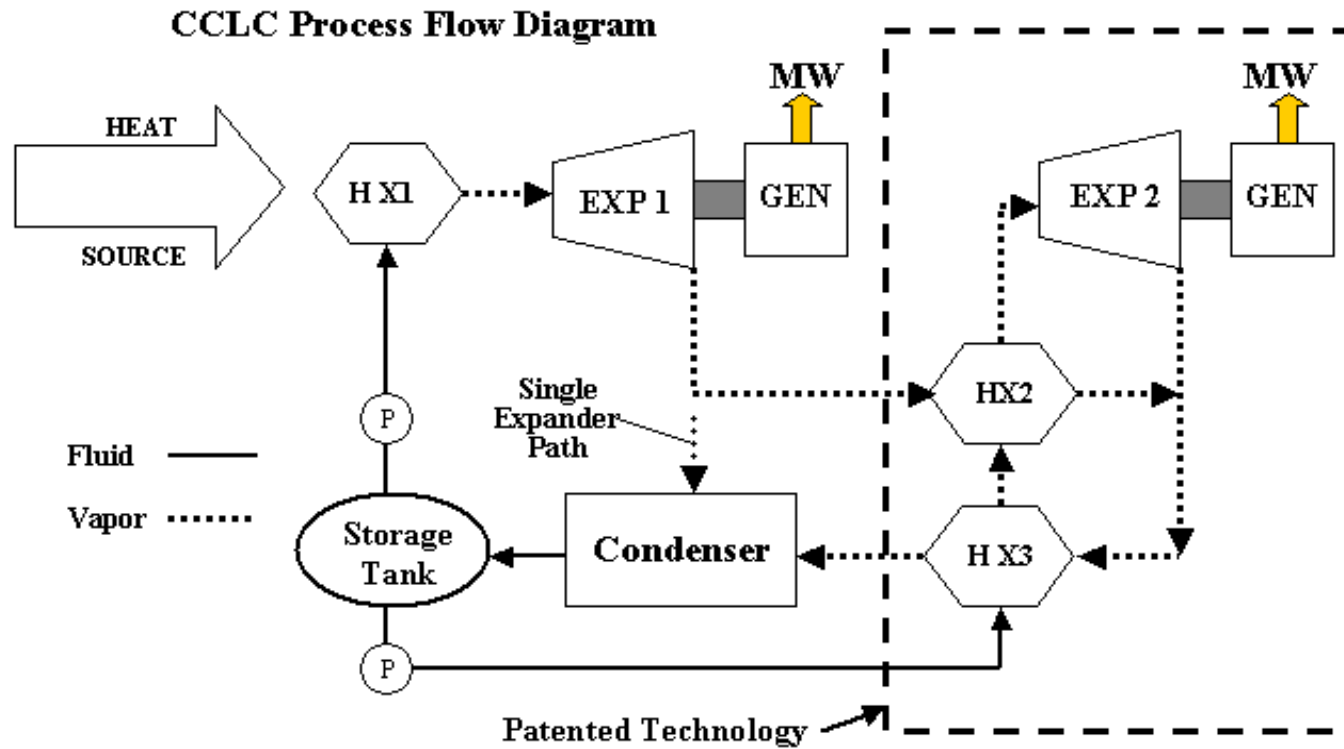


WOW Energy, Inc

GOALS & OBJECTIVES

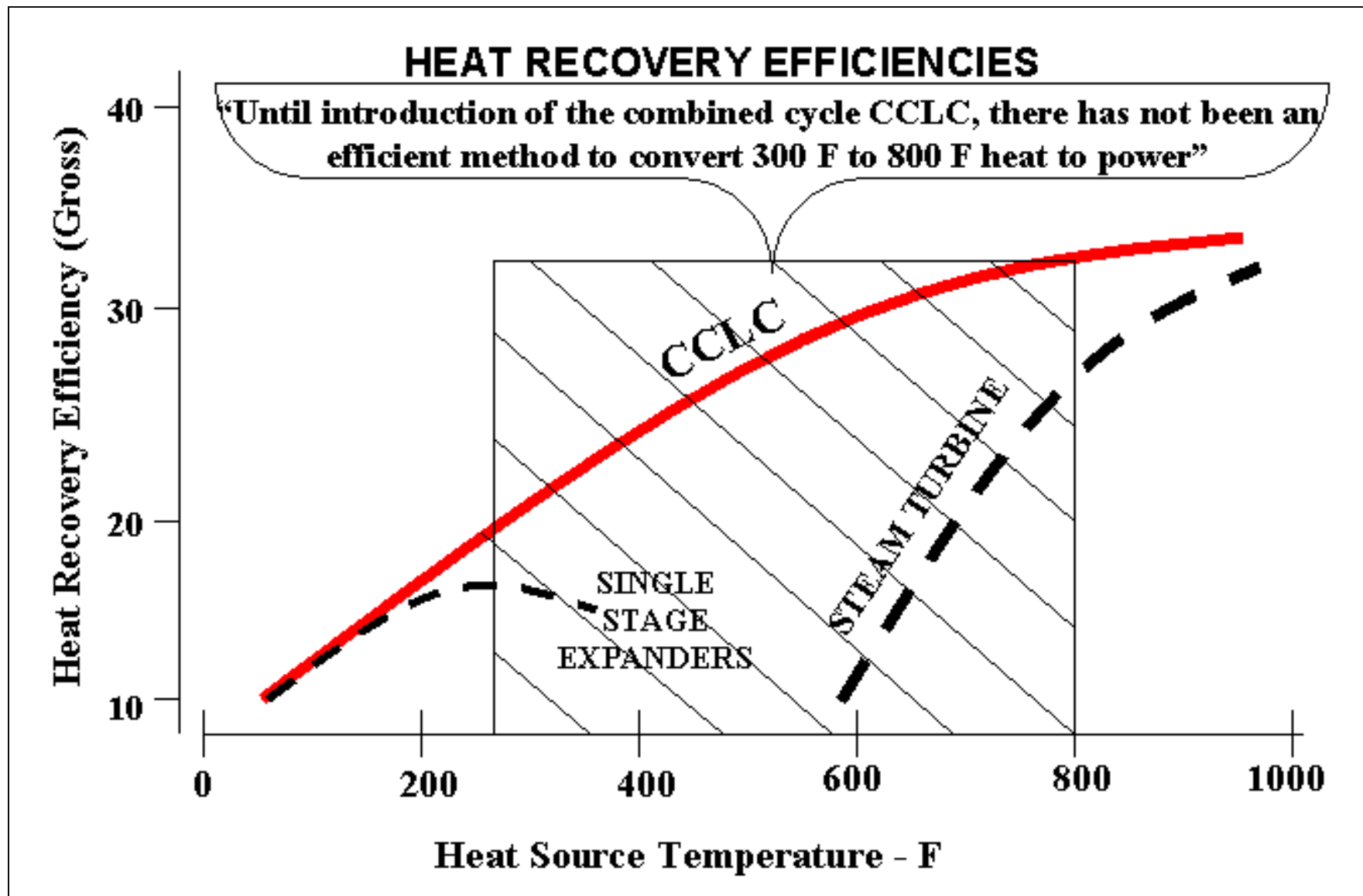
1. Develop technology to convert waste heat to electrical power
 - Technology did not exist to efficiently convert waste heat to power in the 300 F to 700 F temperature range
 - **WOWGen™** combined cycle turbo-expander system – 2 patents issued to date
 - Single stage turbo-expanders for low temperature heat
2. Develop efficient Renewable Energy power plants
 - Solar & Geothermal Energy (SAGE) - **WOWGen™**
 - Biomass power plants - **WOWGen™**
 - Solar power plants - **WOWGen™**
3. Develop multi-pollutant control technology to remove pollutants from flue gases
 - **WOWClean™**

WOWGen™ Cascading Closed Loop Cycle - CCLC

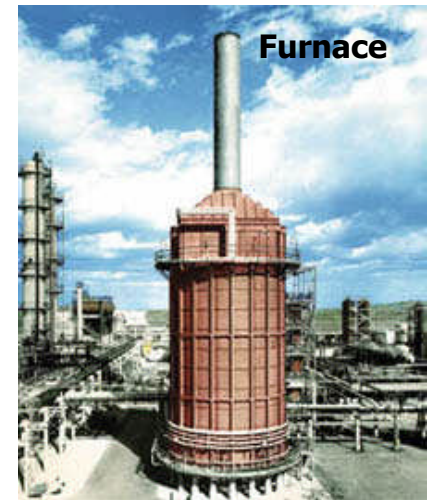
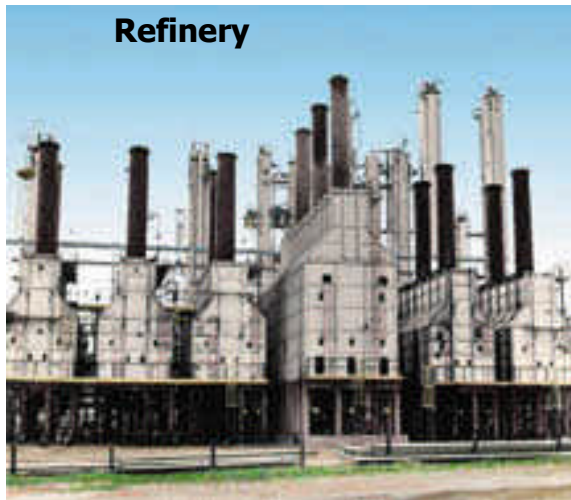


- **Combined cycle “dual” turbo-expander system**
- **Off-the-shelf-components**
- **Converts heat from the combustion of any fuel**
- **Converts waste heat to power**
- **Converts renewable energy to power**

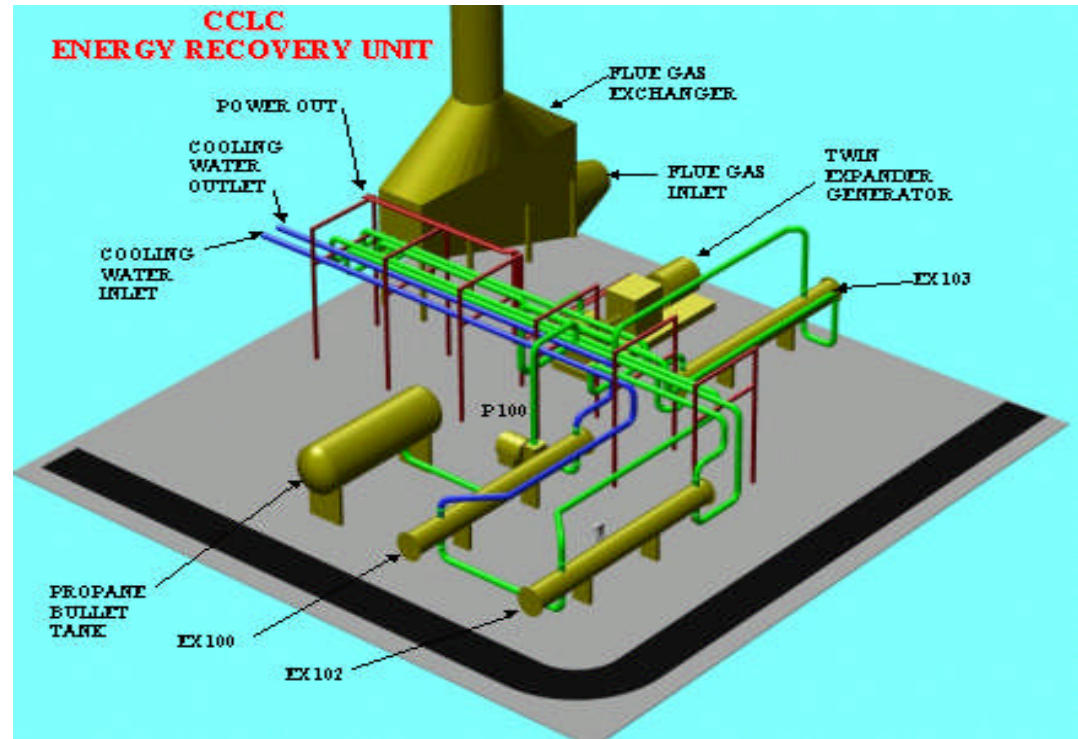
WOWGen™ Generates Electricity From Any Heat Source



WASTE HEAT SOURCES



WOWGen™ HEAT RECOVERY SYSTEM

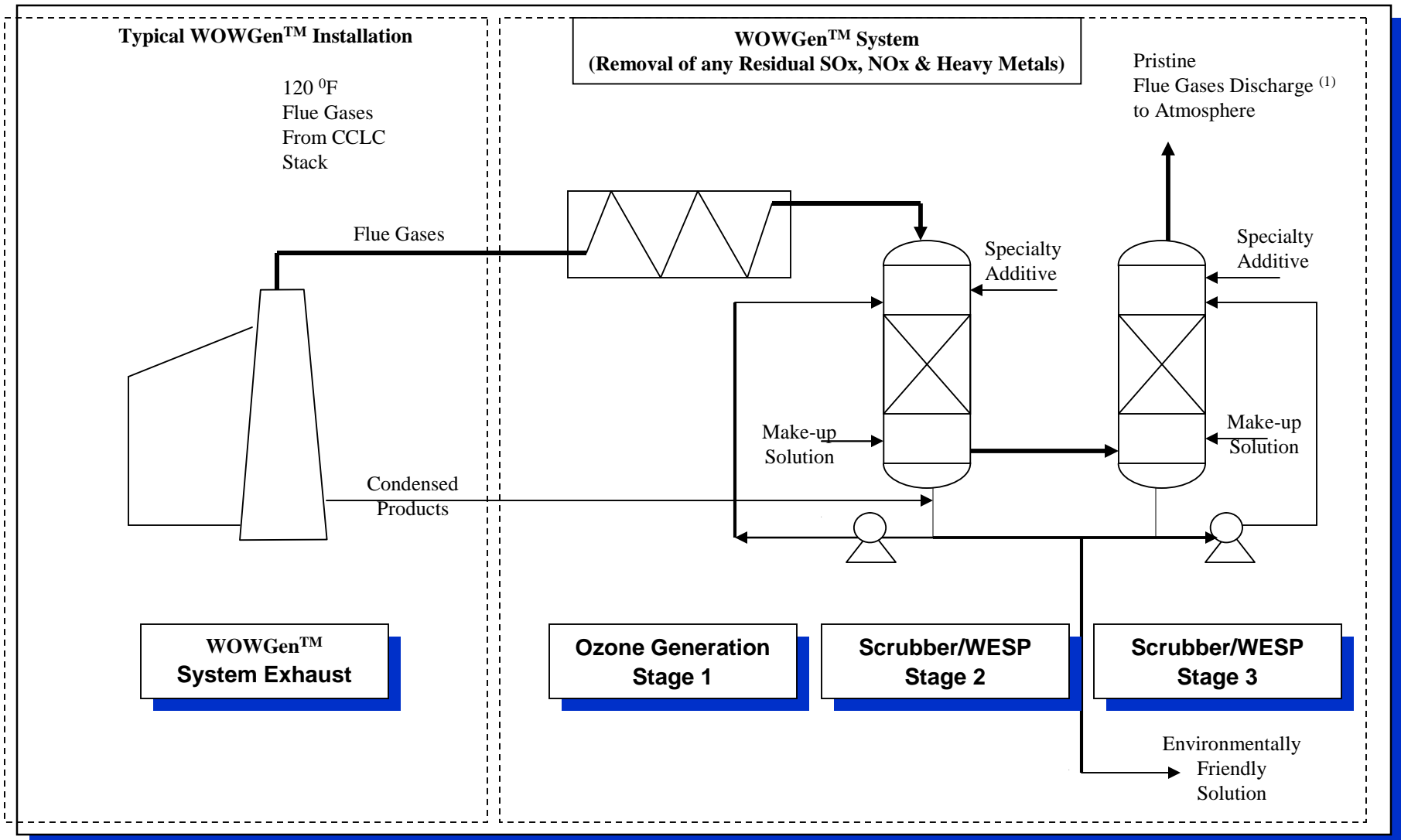


WOW Energies TECHNOLOGY

“Pollution Reduction System that Generates Electricity”

- **WOWGen™** reduces/eliminates flue gas pollutants by reducing final exhaust temperatures to near ambient
 - At reduced temperatures, vaporized pollutants such as Mercury, Vanadium, Cadmium, Chromium, Zinc and Lead are forced to condense
 - Low flue gas temperatures are favorable for elimination of pollutants in flue gas using **WOWClean™**
- **WOWGen™** eliminates water pollution/usage
 - 75% of all electricity produced with steam - 2nd only to irrigation in water usage
 - produces power without using water/steam
- **WOWClean™** system can be used as a standalone unit or with the **WOWGen™** to remove remaining pollutants
 - Integrated reactor & wet electrostatic precipitator (WESP)
 - Advanced Oxidation Processes (AOP) – oxidation without metal catalysts
 - Dual alkali system oxidizes pollutants to water soluble compounds for removal
 - Meets/Exceeds all EPA emission reduction criteria, including Mercury

WOWGen™ and WOWClean™ System



Note: (1) May require exhaust fan

Patented Technology



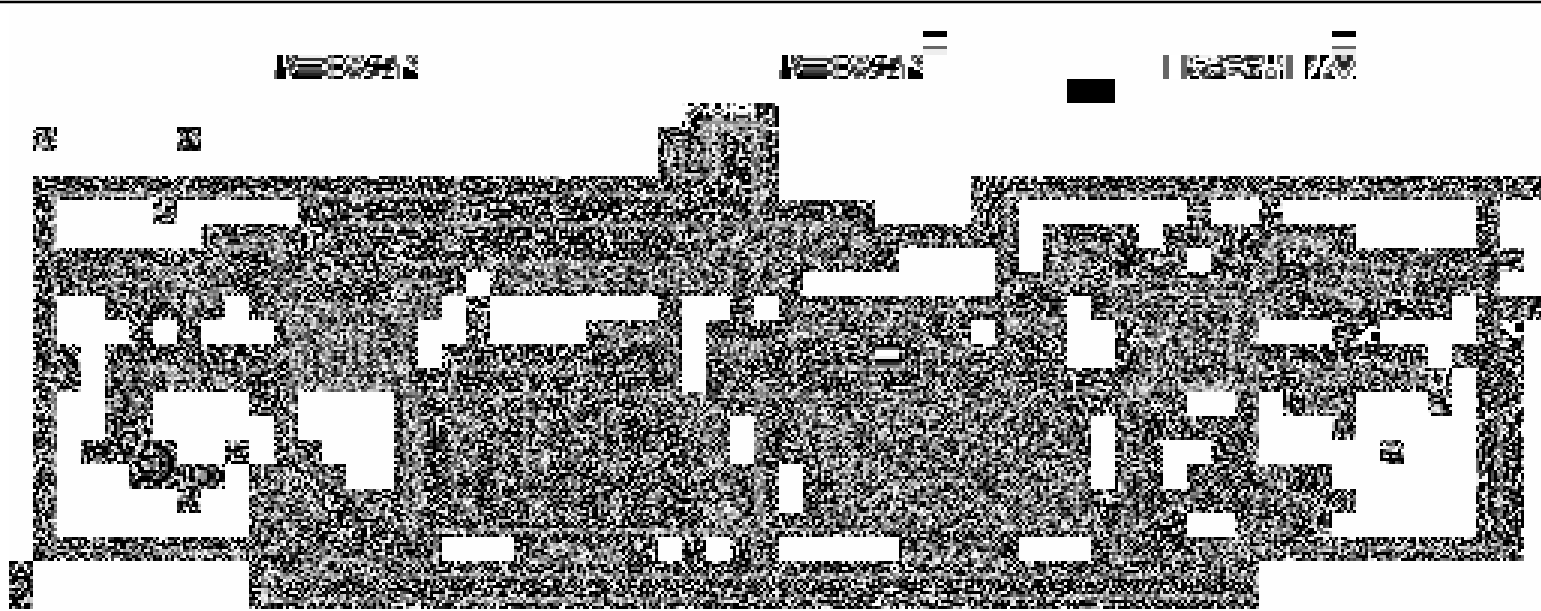
TCEQ Grant WOWClean™ Pilot Plant

- TCEQ grant of \$ 1.6 MM (\$ 220 K in matching funds) – April 2005
- Project to build mobile pilot plant to demonstrate and commercialize flue gas cleaning technology
 - Design/build pilot plant with flexibility to test a broad range of emission reduction capabilities
 - Identified two host sites for trials
 - (1) AES Deepwater, Pasadena, TX – 150 MW petcoke fired power plant
 - (2) Boralex, Livermore, MA – 40 MW wood fired power plant
 - Verify test results with independent third party verification of test results
 - Monthly reporting on progress and use of funds
- Final report to be issued December 2006

WOWClean™ Pilot Plant Advantages

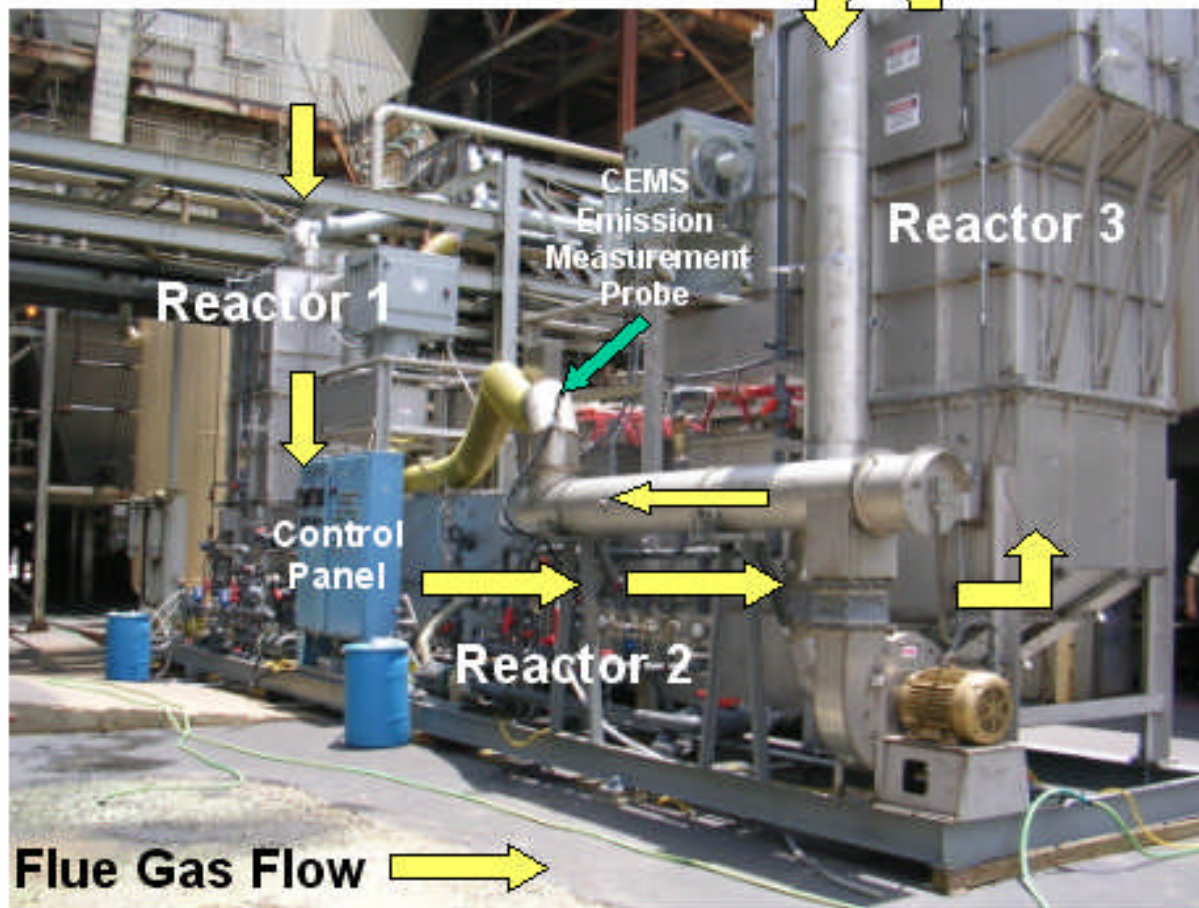
- Superior low temperature multi-pollutant control technology
- Fully mobile, can be installed in any plant to test flue gases
- Compact design, yet operates as a full scale unit
- Allows optimization of design prior to installation of full scale plant

WOWClean™ Features



- **95% NO_x & SO_x (tested 100% removal)**
- **85% Mercury**
- **90% Vaporized heavy metals**
- **99.5% Particulate removal**
- **25% CO₂ (tested 85% removal)**

WOWClean™ Pilot Plant



WOWClean™ Test Results

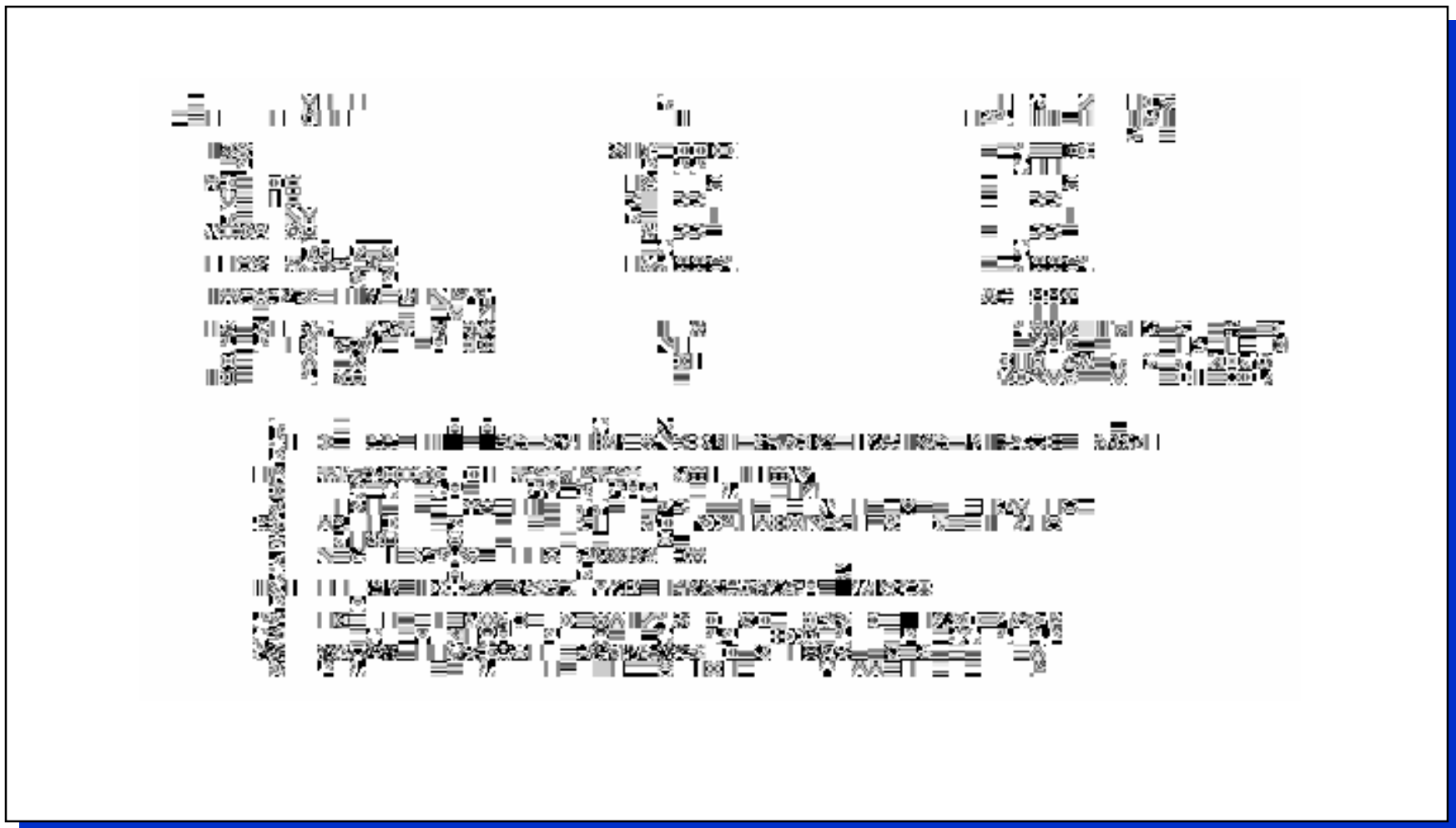
Test Site - AES 150 MW Petcoke Fired Power Plant



Note: 6% Sulfur Fuel

WOWClean™ Test Results

Test Site – Boralex 40 MW Wood Waste Power Plant

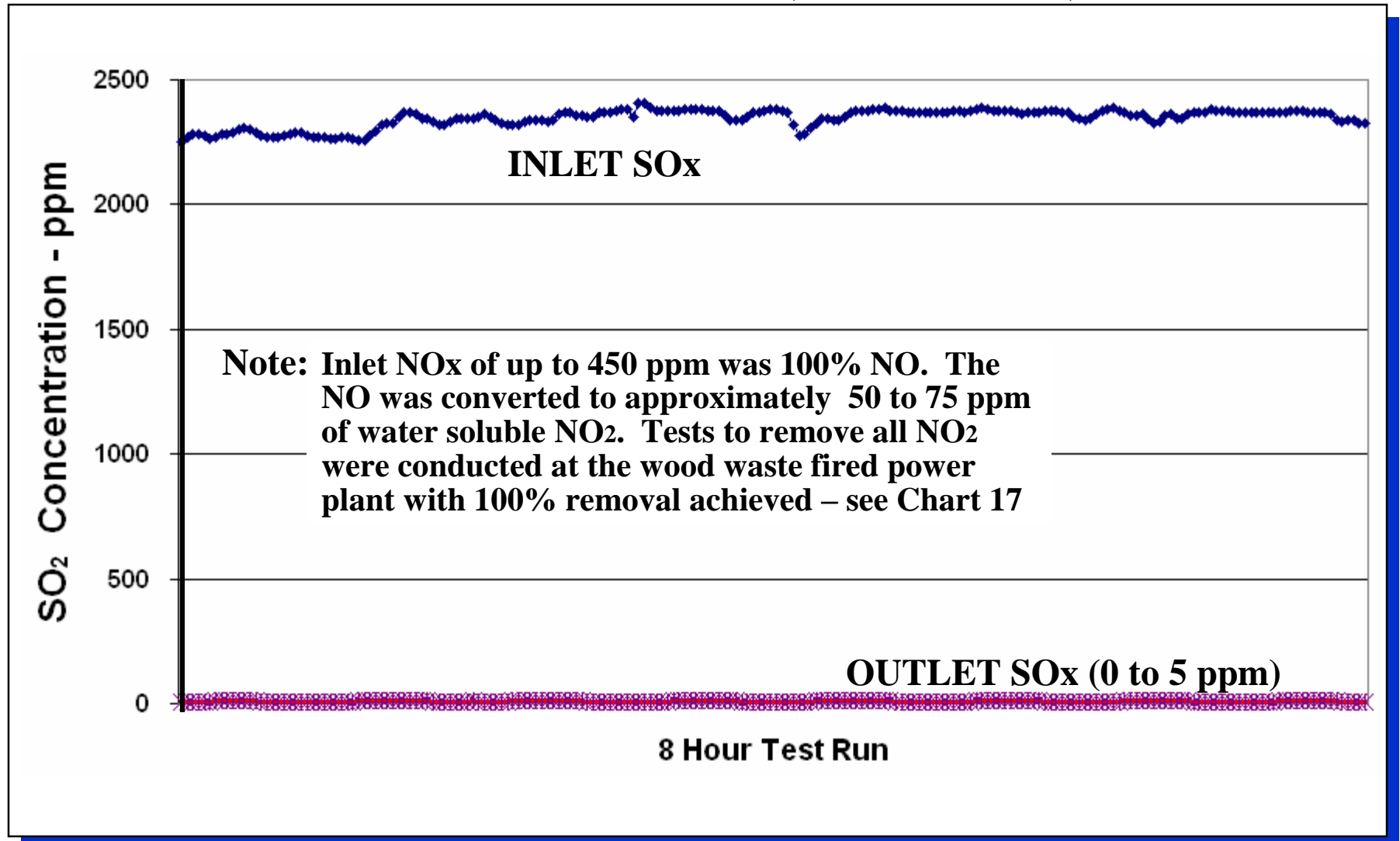


WOWClean™ Test Results

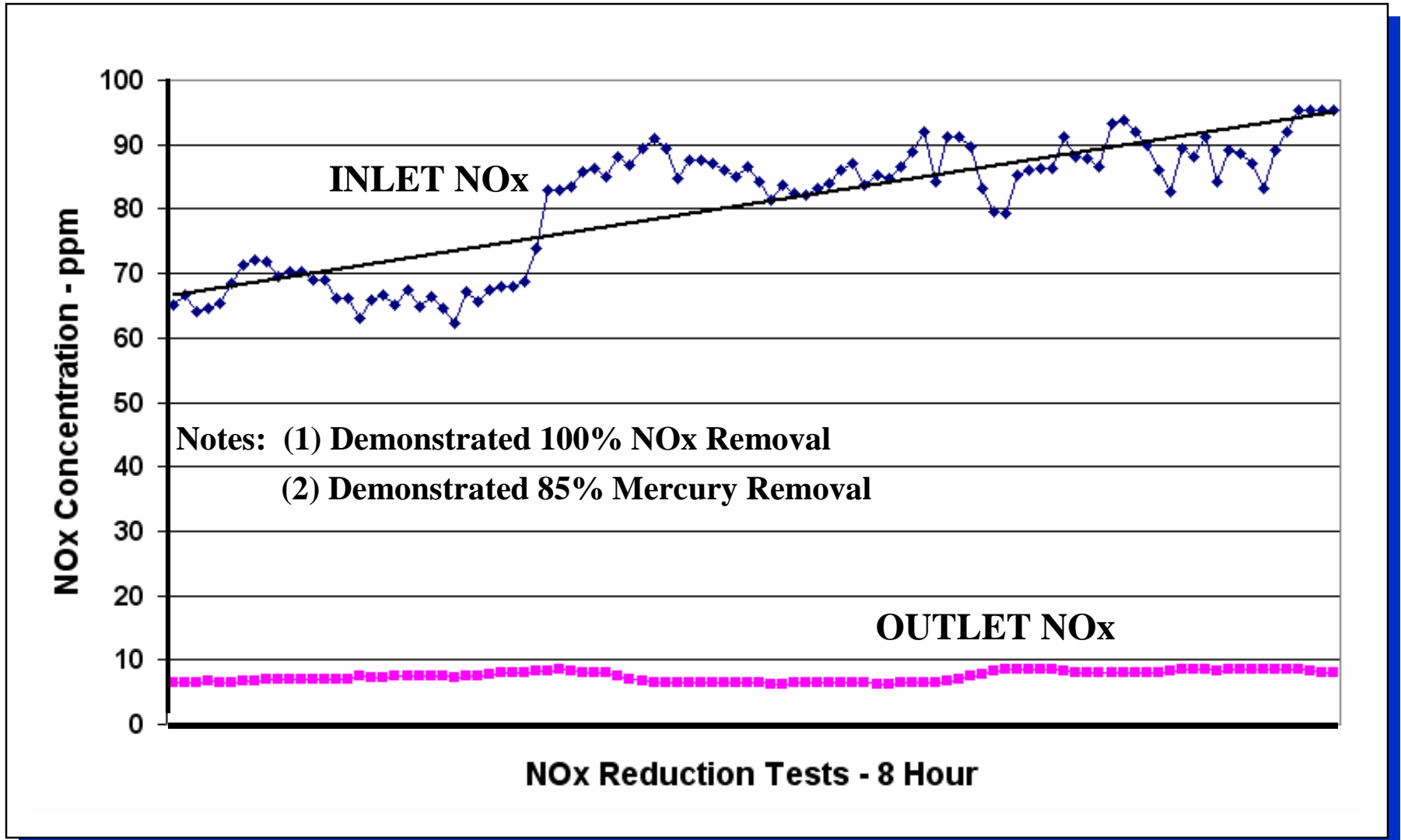
ROBUST SYSTEM

- **Impervious to changing power loads and varying inlet pollutant levels**
- **Test runs (each in triplicate)**
 - **100% power load**
 - **50% power load**
- **Removal rates remained relatively constant despite wide swings in inlet composition/pollutant levels and plant loads**

**WOWClean™
SOx Removal Tests
Petcoke Fired Power Plant (6% Sulfur Fuel)**



WOWClean™ NO_x Removal Tests Wood Waste Fired Power Plant



WOWClean™ CO₂ Removal Tests Wood Waste Fired Power Plant

